

REMARKS

Claims 2-10,13-14, 17-18, 21-22, and 25-38 are pending. Claims 1, 11-12, 15-16, 19-20, and 23-24 have been cancelled. Claims 2-10,13-14, 17-18, 21-22, and 25-26 have been amended. No new matter has been introduced. Reexamination and reconsideration of the application, as amended, are respectfully requested.

In the November 19, 2003 Office Action the Examiner rejected claims 1, 3, 4, 8, 9, and 10 under 35 U.S.C. §102(e) as being anticipated by Saito et al., U.S. Patent No. 6,181,374 (hereinafter the Saito reference). The Examiner rejected claims 5, 6, and 7 under 35 U.S.C. §103(a) as being obvious over the Saito reference, in view of Lin et al., U.S. Patent No. 6,642,962 (hereinafter the Lin reference). The Examiner rejected claims 11,12, 15-16, 19-20, 23-24, 27, 29, 32, 33, 35-36 and 38 under 35 U.S.C. §103(a) as being obvious over the Saito reference, in view of Hattori, U.S. Patent No. 5,398,058 (hereinafter the Hattori reference). The Examiner rejected claims 14, 18, 22, and 26 under 35 U.S.C. §103(a) as being obvious over the Saito reference in view of the Hattori reference and in further view of the Lin reference. The Examiner rejected claims 28, 31, 34, and 37 under 35 U.S.C. §103(a) as being obvious over the Saito reference in view of the Hattori reference and in further view of Spaulding et al., U.S. Patent No. 6,243,133 (hereinafter the Spaulding reference).

The Examiner objected to claims 2, 13, 17, 21, and 25 as being dependent upon rejected base claims, but indicated that such claims would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims. By this amendment, the Applicants have rewritten in independent form claims 2, 13, 17, 21, and 25 in accordance with the Examiner's remarks. The Applicants note

that dependent claims 12, 16, 20, and 24 were considered to be intervening claims for antecedent basis reasons and thus the limitations of these claims have been incorporated into rewritten independent claims 13, 17, 21, and 25, respectively.

The Applicants believe rewritten independent claims 2, 13, 17, 21, and 25 are in condition for allowance. In addition, claims 3-7, 14, 18, 22, and 26 have been amended to depend from independent claims 2, 13, 17, 21, and 25, respectively. Therefore, Applicants believe amended claims 3-7, 14, 18, 22, and 26 are in condition for allowance.

Independent claims 8-10, as amended, recite limitations similar to independent claims 2, 13, 17, 21, and 25. The Applicant believes independent claims 8-10, as amended, are also in condition for allowance.

Independent claim 27 recites:

A method of processing data representative of a color image based upon color information extracted from pixels in an imaging array, the imaging array including a plurality of pixels, each of the plurality of pixels being responsive to photon energy in one of a plurality of distinct spectral regions, each of the spectral regions being associated with one of a plurality of color channels, each of the pixels being capable of providing data representative of an intensity of photoexposure in the spectral region and color channel associated with the pixel over an exposure period, the method comprising:

associating a group of pixels in the array, the group of pixels including at least one pixel associated with each of the plurality of color channels;

for each of the pixels in the associated group of pixels, determining an associated whiteness weight based upon a dispersion among the intensities of photoexposure at pixels in the group associated with distinct ones of the color channels; and

determining gain coefficients to be applied to intensities of photoexposure in the image for pixels associated with at least one of the color channels based upon an accumulation of the intensities of photoexposure of each of the pixels of the color channel weighted by the whiteness weight associated with the pixel.

In the November 19, 2003 Office Action the Examiner rejected claims 27, 29, 32, 33, 35-36 and 38 under 35 U.S.C. §103(a) as being obvious over the Saito reference, in view of the Hattori reference. The Saito reference does not disclose, teach, or suggest the method specified in independent claim 27. Unlike the method specified in independent claim 27, the Saito reference does not show **“for each of the pixels in the associated group of pixels, determining an associated whiteness weight** based upon a dispersion among the intensities of photoexposure at pixels in the group associated with distinct ones of the color channels”. Independent claims 30, 33, and 36 recite limitations similar to independent claim 27.

The Saito reference states “FIG. 5 shows a circuit of a photograph system of a video camera of the first embodiment of the present invention. As shown in FIG. 5, a picture image is pick up by a lens 1 and the picture image is formed on a light receiving surface of a charge coupled device (CCD) 3. **A photograph signal S is output from the charge coupled device 3.** The photograph signal S is sample/hold (S/H)

processed and gain controlled in a sample/hold and automatic gain control (AGC) circuit 5. Further, the photograph signal S is converted into a digital signal by an analog/digital (A/D) convertor 7 and input to a brightness signal process circuit 11 and a color separator circuit 13 in a signal process circuit 9 and a color separator circuit 15" (col. 6, line 65 – col. 7, line 9).

The Saito reference also states "The white judgement portion 33 decides whether divided areas from where a picture image is picked up are substantially white or not judging from the ratios IR/IG and IB/IG . As shown in FIG. 6, the white judgement portion 33 designs a black body radiation approximate curvature CBL and an automatic white balance follow-up region A1. **A photograph signal S** is obtained by photographing a white object under light sources having different color temperatures. **The ratios IR/IG and IB/IG are detected from the values of each element color signals R, G and B of the photograph signal S** so that the black body radiation approximate curvature CBL can be designed. The follow-up region A1 for controlling white balance properly is provided with some range along the black body radiation approximate curvature CBL as a center line. If the ratios IR/IG and IB/IG are located at a point within the follow-up region A1, it is judged that the picture image pick up from the divided area is substantially white. The values of the ratios IR/IG and IB/IG of which the divided areas are judged to be substantially white are only input to the average adding portion 35" (col. 7, line 54 – col. 8, line 6).

The Saito reference further states "The average value adding portion 35 adds only values of the ratios IR/IG and IB/IG of which the divided areas are judged as substantially white and calculates the average values thereof. Averaged values

AIR/AIG and AIB/AIG output from the average value adding portion 35 are input to the control value computing portion 37. The control value computing portion 37 outputs white balance control signals Rcont and Bcont for properly controlling white balance in accordance with the averaged values AIR/AIG and AIB/AIG. A white balance control is operated by utilizing the **white balance control signals Rcont and Bcont** in the white balance circuit 19" (col. 8, lines 7-18).

The Saito reference further states "In a white balance circuit 19, the **three element signals R, G and B** are white balance controlled (gain controlled) in accordance with **white balance control signals Rcont and Bcont** from a control value computing portion 37. Such white balance controlled three element color signals R, G and B are signal processed by a color signal process circuit 21 and changed to a digital color signal DC" (col. 7, lines 17-24).

The Saito reference does not show "**for each of the pixels in the associated group of pixels, determining an associated whiteness weight** based upon a dispersion among the intensities of photoexposure at pixels in the group associated with distinct ones of the color channels". Accordingly, Applicants respectfully submit that independent claim 27 distinguishes over the Saito reference.

The Hattori reference does not make up for the Saito reference. Specifically, the Hattori reference does not show "**for each of the pixels in the associated group of pixels, determining an associated whiteness weight** based upon a dispersion among the intensities of photoexposure at pixels in the group associated with distinct ones of the color channels". Accordingly, Applicants respectfully submit that independent claim 27 distinguishes over the Hattori reference.

Claims 28-29 depend directly from independent claim 27. Therefore, Applicants respectfully submit that claims 28-29 distinguish over the above-cited references for the same reasons as set forth above with respect to independent claim 27.

Applicants note that independent claims 30, 33, and 36 recite limitations similar to claim 27. Therefore, independent claims 30, 33, and 36 also distinguish over the above-cited references for the same reasons as set forth above with respect to independent claim 27.

Claims 31-32, 34-35, and 37-38 all depend directly from independent claims 30, 33, and 36, respectively. Therefore, Applicants respectfully submit that claims 31-32, 34-35, and 37-38 distinguish over the above-cited references for the same reasons as set forth above with respect to independent claim 27.

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The Applicants believe that the foregoing amendments place the application in condition for allowance, and a favorable action is respectfully requested. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles telephone number (213) 488-7100 to discuss the steps necessary for placing the application in condition for allowance should the Examiner believe that such a telephone conference would advance prosecution of the application.

Respectfully submitted,

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